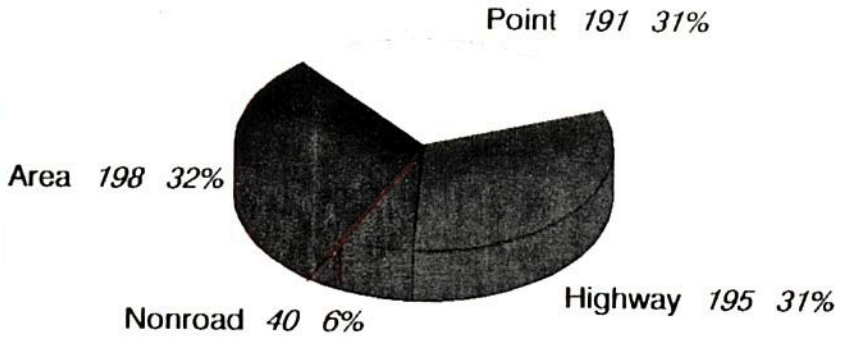
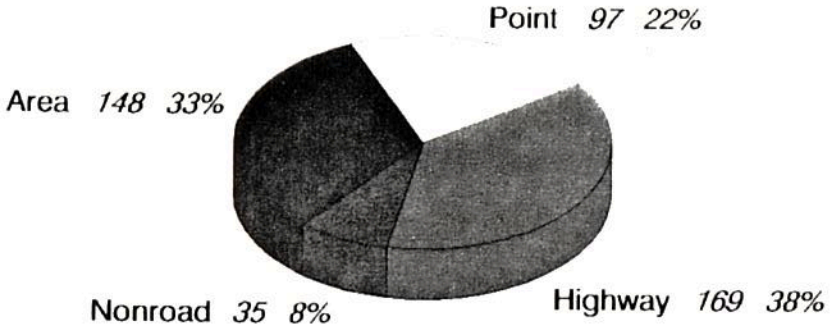
1990 BASE YEAR EMISSIONS INVENTORY

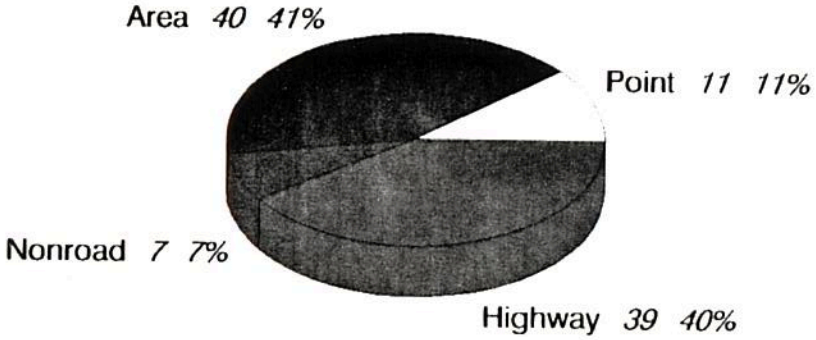
TOTAL ANTHROPOGENIC EMISSIONS IN TONS/DAY BY NONATTAINMENT AREA BY SOURCE CATEGORY



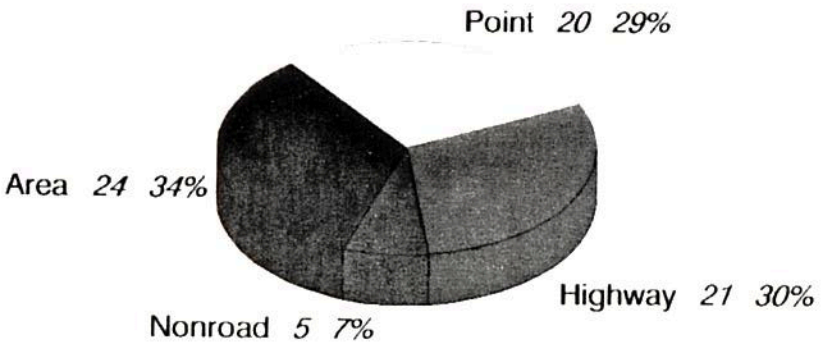
PHILADELPHIA (PA)



PITTSBURGH



ALLENTOWN



READING

TABLE 1.1A
ZONE 1 PHILADELPHIA SEVERE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
BUCKS	65	30	6	37	41	179
CHESTER	24	21	4	27	66	142
DELAWARE	69	28	9	26	9	141
MONTGOMERY	7	39	8	50	33	137
PHILADELPHIA	26	80	12	55	6	179
TOTAL	191	198	40	195	156	778

TABLE 1.1 B
ZONE 1 PHILADELPHIA SEVERE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BUCKS	13	2	11	37	63
CHESTER	27	2	8	29	66
DELAWARE	105	2	12	24	143
MONTGOMERY	7	2	17	50	76
PHILADELPHIA	33	3	23	52	111
TOTAL	185	11	71	192	459

TABLE 1.1 C
ZONE 1 PHILADELPHIA SEVERE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BUCKS	120	3	89	235	448
CHESTER	26	2	61	179	268
DELAWARE	12	3	81	161	257
MONTGOMERY	14	5	143	325	486
PHILADELPHIA	20	8	195	364	587
TOTAL	192	21	569	1265	2047

Totals may not sum due to rounding

TABLE 1.2 A
ZONE 2 READING MODERATE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
BERKS	20	24	5	21	74	144
TOTAL	20	24	5	21	74	144

TABLE 1.2 B
ZONE 2 READING MODERATE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS **NOx**

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BERKS	19	3	10	22	54
TOTAL	19	3	10	22	54

TABLE 1.2 C
ZONE 2 READING MODERATE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF **CO**

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BERKS	10	11	74	146	241
TOTAL	10	11	74	146	241

Totals may not sum due to rounding

TABLE 1.3 A

ZONE 3 LANCASTER MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF **VOC**

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
LANCASTER	29	31	7	28	59	154
TOTAL	29	31	7	28	59	154

TABLE 1.3 B

ZONE 3 LANCASTER MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF **NOx**

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
LANCASTER	14	3	14	28	59
TOTAL	14	3	14	28	59

TABLE 1.3 C

ZONE 3 LANCASTER MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF **CO**

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
LANCASTER	1	20	91	179	291
TOTAL	1	20	91	179	291

Totals may not sum due to rounding

TABLE 1.4 A

ZONE 4 ALLENTOWN (ABE) MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
CARBON	0	4	1	3	37	45
LEHIGH	7	20	3	13	22	65
NORTHAMPTON	4	16	3	21	30	74
TOTAL	11	40	7	39	88	185

TABLE 1.4 B

ZONE 4 ALLENTOWN (ABE) MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
CARBON	0	1	1	5	7
LEHIGH	173	2	7	13	195
NORTHAMPTON	167	1	6	21	195
TOTAL	340	5	14	39	398

TABLE 1.4 C

ZONE 4 ALLENTOWN (ABE) MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
CARBON	0	4	10	31	45
LEHIGH	16	7	63	81	167
NORTHAMPTON	423	8	40	134	605
TOTAL	439	19	113	246	817

Totals may not sum due to rounding

TABLE 1.5 A
ZONE 5 YORK MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
ADAMS	5	7	1	6	37	56
YORK	16	24	6	25	70	141
MSA-TOTAL	21	31	7	31	107	197
FRANKLIN	3	10	2	11	66	93
ZONE TOTAL	24	42	9	42	174	291

TABLE 1.5 B
ZONE 5 YORK MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
ADAMS	0	1	3	6	9
YORK	161	2	10	24	197
MSA-TOTAL	161	3	12	30	206
FRANKLIN	1	1	4	11	16
ZONE TOTAL	162	4	16	40	221

TABLE 1.5 C
ZONE 5 YORK MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
ADAMS	0	5	14	32	51
YORK	21	14	76	169	279
MSA-TOTAL	21	19	90	201	330
FRANKLIN	0	7	21	73	101
ZONE TOTAL	21	26	111	274	432

Totals may not sum due to rounding

TABLE 1.6 A
ZONE 6 HARRISBURG MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
CUMBERLAND	4	15	3	18	45	85
DAUPHIN	3	16	4	22	44	89
LEBANON	11	9	2	8	32	62
PERRY	0	4	1	3	50	58
TOTAL	18	44	9	51	170	292

TABLE 1.6 B
ZONE 6 HARRISBURG MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
CUMBERLAND	6	2	5	19	31
DAUPHIN	7	2	6	22	37
LEBANON	2	1	3	8	14
PERRY	2	0	1	3	6
TOTAL	16	6	14	52	88

TABLE 1.6 C
ZONE 6 HARRISBURG MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
CUMBERLAND	0	10	33	138	181
DAUPHIN	28	8	44	155	235
LEBANON	1	7	20	58	86
PERRY	1	2	5	19	27
TOTAL	30	27	101	370	528

Totals may not sum due to rounding

TABLE 1.7 A

ZONE 7 SCRANTON MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
COLUMBIA	1	5	1	5	29	42
LACKAWANNA	10	12	3	15	33	73
LUZERNE	8	20	4	21	69	122
MONROE	1	8	1	9	51	70
WYOMING	1	2	1	2	22	28
MSA-TOTAL	21	47	11	52	204	335
PIKE	0	2	0	3	51	57
SCHUYKILL	5	12	2	10	68	97
SUSQUEEHANNA	0	4	1	4	54	62
WAYNE	0	3	1	3	50	57
ZONE TOTAL	26	68	15	72	426	607

TABLE 1.7 B

ZONE 7 SCRANTON MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
COLUMBIA	1	1	2	5	9
LACKAWANNA	2	2	5	15	24
LUZERNE	11	4	6	21	42
MONROE	1	1	2	10	13
WYOMING	8	0	1	2	11
MSA-TOTAL	23	7	16	53	99
PIKE	0	0	0	4	5
SCHUYKILL	59	4	4	11	77
SUSQUEEHANNA	0	0	1	4	6
WAYNE	0	0	1	3	4
ZONE TOTAL	82	12	23	76	193

TABLE 1.7 C

ZONE 7 SCRANTON MARGINAL OZONE NONATTAINMENT AREA

EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
COLUMBIA	0	4	14	35	53
LACKAWANNA	0	6	39	107	152
LUZERNE	1	12	53	149	215
MONROE	0	6	13	67	85
WYOMING	2	10	5	11	24
MSA-TOTAL	3	38	124	369	528
PIKE	0	2	3	26	31
SCHUYKILL	2	10	27	67	107
SUSQUEEHANNA	0	2	7	29	38
WAYNE	0	2	6	18	27
ZONE TOTAL	5	55	167	508	735

Totals may not sum due to rounding

TABLE 1.8 A

ZONE 8 ALTOONA MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
BLAIR	2	11	2	8	44	67
MSA-TOTAL	2	11	2	8	44	67
BEDFORD	1	5	1	7	79	93
FULTON	0	2	0	3	27	32
HUNTINGTON	0	4	1	3	63	71
JUNIATA	1	2	1	2	36	41
MIFFLIN	2	4	1	3	39	49
ZONE TOTAL	7	26	6	27	288	354

TABLE 1.8 B

ZONE 8 ALTOONA MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BLAIR	6	1	4	8	19
MSA-TOTAL	6	1	4	8	19
BEDFORD	5	1	2	9	16
FULTON	0	0	1	4	5
HUNTINGTON	0	1	1	4	6
JUNIATA	1	0	1	2	4
MIFFLIN	1	1	1	3	6
ZONE TOTAL	13	3	10	29	55

TABLE 1.8 C

ZONE 8 ALTOONA MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BLAIR	2	8	21	49	80
MSA-TOTAL	2	8	21	49	80
BEDFORD	1	3	7	62	73
FULTON	0	1	2	28	31
HUNTINGTON	0	3	7	21	31
JUNIATA	0	1	4	11	16
MIFFLIN	8	3	9	18	38
ZONE TOTAL	11	19	50	190	270

Totals may not sum due to rounding

TABLE 1.9 A
ZONE 9 STATE COLLEGE AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
CAMERON	0	1	0	0	32	33
CENTRE	0	14	2	9	124	149
CLEARFIELD	0	7	1	7	121	136
CLINTON	2	3	1	3	110	119
SNYDER	2	3	1	3	30	39
UNION	4	3	1	3	33	44
TOTAL	8	31	5	26	450	520

TABLE 1.9 B
ZONE 9 STATE COLLEGE AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
CAMERON	0	0	0	0	0
CENTRE	7	2	3	10	21
CLEARFIELD	46	1	2	8	57
CLINTON	16	0	1	4	22
SNYDER	38	0	1	3	43
UNION	2	0	1	4	8
TOTAL	109	5	8	28	150

TABLE 1.9 C
ZONE 9 STATE COLLEGE AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
CAMERON	0	1	1	2	4
CENTRE	4	31	18	60	112
CLEARFIELD	2	5	12	53	72
CLINTON	3	3	6	26	38
SNYDER	2	2	8	17	29
UNION	0	2	7	23	32
TOTAL	10	43	51	180	285

Totals may not sum due to rounding

TABLE 1.10 A
ZONE 10 WILLIAMSPORT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
BRADFORD	3	6	1	4	75	89
LYCOMING	3	8	2	8	89	110
MONTOUR	1	5	0	2	8	16
NORTHUMBERLAND	8	7	2	6	40	63
POTTER	0	2	0	1	81	84
SULLIVAN	0	1	0	1	34	36
TIOGA	0	4	1	3	70	78
TOTAL	16	31	7	25	397	476

TABLE 1.10 B
ZONE 10 WILLIAMSPORT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BRADFORD	1	1	3	4	8
LYCOMING	4	1	4	8	17
MONTOUR	121	0	1	2	124
NORTHUMBERLAND	3	1	3	6	13
POTTER	18	0	1	1	20
SULLIVAN	0	0	1	1	2
TIOGA	3	0	1	3	8
TOTAL	150	4	12	25	191

TABLE 1.10 C
ZONE 10 WILLIAMSPORT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BRADFORD	0	4	12	21	37
LYCOMING	1	8	25	51	85
MONTOUR	4	1	3	13	22
NORTHUMBERLAND	1	6	19	38	64
POTTER	2	2	3	7	13
SULLIVAN	0	0	2	3	5
TIOGA	1	2	6	17	27
TOTAL	9	23	69	150	251

Totals may not sum due to rounding

TABLE 1.11 A

ZONE 11 PITTSBURGH MODERATE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
ALLEGHENY	81	71	19	90	26	287
ARMSTRONG	1	5	1	4	46	58
BEAVER	7	10	2	13	31	64
BUTLER	1	11	2	11	46	72
FAYETTE	1	10	2	8	62	83
WASHINGTON	1	14	3	16	45	79
WESTMORELAND	4	26	5	27	68	130
MSA-TOTAL	97	148	35	169	324	772
GREENE	1	3	1	3	31	39
ZONE TOTAL	98	151	35	172	355	811

TABLE 1.11 B

ZONE 11 PITTSBURGH MODERATE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
ALLEGHENY	73	1	27	83	184
ARMSTRONG	189	1	2	4	195
BEAVER	210	1	4	12	226
BUTLER	5	1	4	11	21
FAYETTE	3	2	3	8	15
WASHINGTON	49	1	5	18	73
WESTMORELAND	19	3	9	29	59
MSA-TOTAL	548	9	53	166	775
GREENE	136	1	1	3	141
ZONE TOTAL	684	10	54	169	916

TABLE 1.11 C

ZONE 11 PITTSBURGH MODERATE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
ALLEGHENY	438	7	201	542	1188
ARMSTRONG	6	4	10	24	44
BEAVER	20	3	24	71	118
BUTLER	230	9	26	69	334
FAYETTE	0	8	17	46	71
WASHINGTON	5	9	30	108	152
WESTMORELAND	26	2	68	170	266
MSA-TOTAL	725	42	376	1030	2173
GREENE	4	2	5	21	33
ZONE TOTAL	729	44	381	1051	2205

Totals may not sum due to rounding

TABLE 1.12 A
ZONE 12 SHARON MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
MERCER	3	9	3	9	44	68
MSA-TOTAL	3	9	3	9	44	68
CLARION	1	3	1	4	47	56
JEFFERSON	0	3	1	4	50	58
LAWRENCE	1	7	1	6	25	40
VENANGO	1	5	1	5	68	80
ZONE TOTAL	7	28	7	28	234	304

TABLE 1.12 B
ZONE 12 SHARON MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
MERCER	11	1	4	10	25
MSA-TOTAL	11	1	4	10	25
CLARION	3	0	2	5	10
JEFFERSON	3	0	2	5	11
LAWRENCE	33	1	2	6	42
VENANGO	3	0	1	5	10
ZONE TOTAL	53	2	11	31	97

TABLE 1.12 C
ZONE 12 SHARON MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
MERCER	320	7	23	62	412
MSA-TOTAL	320	7	23	62	412
CLARION	0	3	7	31	40
JEFFERSON	0	3	9	27	39
LAWRENCE	6	3	14	36	59
VENANGO	3	4	7	29	43
ZONE TOTAL	329	19	60	185	593

Totals may not sum due to rounding

TABLE 1.13 A
ZONE 13 ERIE MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
ERIE	16	18	4	15	40	93
MSA-TOTAL	16	18	4	15	40	93
CRAWFORD	0	7	2	6	60	75
ELK	0	3	1	2	79	84
FOREST	0	1	0	1	38	40
McKEAN	1	4	1	3	87	95
WARREN	5	4	1	3	75	87
ZONE TOTAL	23	36	8	29	379	475

TABLE 1.13 B
ZONE 13 ERIE MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
ERIE	32	1	7	16	56
MSA-TOTAL	32	1	7	16	56
CRAWFORD	4	1	3	7	14
ELK	4	0	1	2	8
FOREST	4	0	0	1	5
McKEAN	5	0	1	3	10
WARREN	12	0	1	3	17
ZONE TOTAL	62	2	14	32	111

TABLE 1.13 C
ZONE 13 ERIE MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
ERIE	6	7	51	106	99
MSA-TOTAL	6	7	51	106	99
CRAWFORD	0	5	16	41	62
ELK	1	2	8	11	22
FOREST	1	2	1	3	7
McKEAN	1	3	8	15	27
WARREN	1	3	8	17	28
ZONE TOTAL	10	22	91	193	316

Totals may not sum due to rounding

TABLE 1.14 A

ZONE 14 JOHNSTOWN MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
CAMBRIA	1	11	2	11	62	87
SOMERSET	1	7	1	8	100	117
MSA-TOTAL	2	18	3	19	162	204
INDIANA	4	8	1	7	71	91
ZONE TOTAL	6	25	5	26	232	294

TABLE 1.14 B

ZONE 14 JOHNSTOWN MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
CAMBRIA	6	2	4	9	20
SOMERSET	1	1	2	9	14
MSA-TOTAL	7	3	6	18	34
INDIANA	340	1	3	6	350
ZONE TOTAL	347	4	8	25	384

TABLE 1.14 C

ZONE 14 JOHNSTOWN MARGINAL OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
CAMBRIA	41	7	22	65	135
SOMERSET	6	5	12	61	84
MSA-TOTAL	47	11	34	126	218
INDIANA	11	5	14	38	68
ZONE TOTAL	58	17	48	164	287

Totals may not sum due to rounding

ZONE 1 PHILADELPHIA SEVERE OZONE NONATTAINMENT AREA

BUCKS COUNTY
CHESTER COUNTY
DELAWARE COUNTY
MONTGOMERY COUNTY
PHILADELPHIA COUNTY

TABLE 1.1A

ZONE 1 PHILADELPHIA SEVERE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF VOC

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	BIOGENIC	TOTAL
BUCKS	65	30	6	37	41	179
CHESTER	24	21	4	27	66	142
DELAWARE	69	28	9	26	9	141
MONTGOMERY	7	39	8	50	33	137
PHILADELPHIA	26	80	12	55	6	179
TOTAL	191	198	40	195	156	778

TABLE 1.1 B

ZONE 1 PHILADELPHIA SEVERE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF NOx

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BUCKS	13	2	11	37	63
CHESTER	27	2	8	29	66
DELAWARE	105	2	12	24	143
MONTGOMERY	7	2	17	50	76
PHILADELPHIA	33	3	23	52	111
TOTAL	185	11	71	192	459

TABLE 1.1 C

ZONE 1 PHILADELPHIA SEVERE OZONE NONATTAINMENT AREA
EMISSIONS IN TONS PER DAY OF CO

COUNTY	POINT	AREA	OFF-ROAD	HIGHWAY	TOTAL
BUCKS	120	3	89	235	448
CHESTER	26	2	61	179	268
DELAWARE	12	3	81	161	257
MONTGOMERY	14	5	143	325	486
PHILADELPHIA	20	8	195	364	587
TOTAL	192	21	569	1265	2047

Totals may not sum due to rounding

LISTING OF VOC FACILITIES *FOR* ZONE 1

Firm Name	County Name	1990 VOC Emissions tons/year	1990 VOC Emissions lbs/day
FASSON-DIV. OF AVERY PROD. CO	Bucks	6637	90965
MINNESOTA MINING & MANUFACTUR	Bucks	1088	16633
UNITED STATES STEEL CORP., TH	Bucks	562	7444
PRE FINISH METALS, INC.	Bucks	230	2184
MEAD PACKING CORP.	Bucks	76	608
PARAMOUNT PACKAGING CORP.	Bucks	60	732
FRES-CO SYSTEMS USA ,INC.	Bucks	56	399
SUPERPAC, INC.	Bucks	46	550
SUN R&M, MALVERN	Bucks	24	132
DYNA CURE PRE COATED STEEL, I	Bucks	22	177
ATLANTIC R&M, EXTON	Bucks	21	112
ROHM & HAAS DELAWARE VALLEY,	Bucks	20	133
DELBAR PRODUCTS	Bucks	18	180
PHILADELPHIA ELECTRIC CO.	Bucks	17	464
NVF CO.	Chester	676	5340
NORWOOD INDUSTRIES, INC.	Chester	460	4884
QUEBECOR PRINTING ATGLEN, INC	Chester	337	2188
DOPACO INC.	Chester	333	2511
REYNOLDS METALS CO.	Chester	174	1808
ICI/LNP	Chester	101	838

TRANSCONTINENTAL GAS PIPE LIN	Chester	75	498
GRAPHIC PACKAGING CORP.	Chester	71	1109
SARTOMER CO,INC.	Chester	64	21841
FERMTEC PRODUCTS, INC.	Chester	45	297
PEPPERIDGE FARM INC.	Chester	39	308
ATLANTIC REFINING & MARKETING	Chester	29	157
CONGOLEUM CORP.	Delaware	7090	67380
BP OIL, INC.	Delaware	4144	22742
SUN REFINING & MARKETING CO.	Delaware	3762	20631
WITCO CHEMICAL CORP.	Delaware	835	5991
CHEVRON U.S.A. INC.	Delaware	745	4081
SLEVIN, JULIAN B. CO.	Delaware	205	1785
SUN REFINING & MARKETING CO.	Delaware	193	1067
CUSTOM COMPOUNDING CO/HOECHST	Delaware	170	1111
BOEING HELICOPTER COMPANY	Delaware	143	1108
SUN REFINING & MARKETING CO.	Delaware	88	479
BP OIL PIPELINE CO. (BPOIL)	Delaware	76	414
LAUREL PIPE LINE CO.	Delaware	74	406
DIAPHANE CORP.	Delaware	47	374
PHILADELPHIA ELECTRIC CO.	Delaware	42	657
SUNROC CORPORATION	Delaware	40	306
CHEVRON U.S.A. INC.	Delaware	39	211
FOAMEX L.P.	Delaware	29	260
SENTRY PAINT TECHNOLOGIES	Delaware	25	189
PRIME SOURCES,INC.	Delaware	23	254

TELEDYNE WIRZ CORP.	Delaware	23	199
ATLANTIC PIPELINE CORP.	Delaware	18	100
CONTAINER RESEARCH CORP.	Delaware	14	195
ASHLAND CHEMICAL COMPANY	Delaware	10	70
JSC/CCA	Montgomery	147	1344
SUN REFINING & MARKETING CO.	Montgomery	139	761
KNOLL INTERNATIONAL INC.	Montgomery	111	852
SUPERIOR TUBE CO.	Montgomery	98	759
OCCIDENTAL CHEMICAL CORP.	Montgomery	73	487
PENCO PRODUCTS, INC.	Montgomery	68	547
SUN R&M, HATBORO	Montgomery	53	290
CONTAINER CORPORATION OF AMER	Montgomery	48	328
MERCK SHARP & DOHME	Montgomery	33	688
PALMER PRODUCTS INC.	Montgomery	27	651
PHILADELPHIA TEXTILE FINISHER	Montgomery	16	291
TOTALS		29929	299500

LISTING OF VOC SMALL SOURCES FOR ZONE 1

Firm Name	County Name	1990 VOC Emissions tons/year	1990 VOC Emissions lbs/day
AUTOMATIC ROLLS OF	BUCKS	24	131.5
DAILY INTELLIGENCER	BUCKS	35	191.8
HI-LINE STORAGE SYST	BUCKS	77	421.9
HULS AMERICA INC 2	BUCKS	75	411.0
J G FURNITURE SYSTEM	BUCKS	27	147.9
MCADOO & ALLEN INC	BUCKS	78	427.4
MOORE BUSINESS FORMS	BUCKS	20	109.6
PENN ENGINEERING	BUCKS	24	131.5
POLYSCIENCES INC	BUCKS	20	109.6
REFRESHMENT MACHINER	BUCKS	27	147.9
RJM MANUFACTURING IN	BUCKS	43	235.6
SCANFORMS INCORPORAT	BUCKS	36	197.3
THE BECK G COMPANY	BUCKS	17	93.2
THE JADE CORPORATION	BUCKS	79	432.9
TRIBORO ELECTRIC COR	BUCKS	11	60.3
VAN LEER CONTAINERS	BUCKS	8	43.8
W R GRACE & CO 2	BUCKS	11	60.3
W R GRACE & CO 3	BUCKS	3	16.4
WARMINSTER FIBERGLAS	BUCKS	42	230.1
WARRINGTON EQUIPMENT	BUCKS	12	65.8
WILLAMETTE INDUSTRIE	BUCKS	17	93.2
AMERICAN INKS AND CO	CHESTER	21	115.1
BECKETT CORPORATION	CHESTER	14	76.7
DELUXE CHECK PRINTER	CHESTER	13	71.2
GRACO METAL PRODUCTS	CHESTER	420	2301.4
JOHN R HOLLINGSWORTH	CHESTER	49	268.5
JOHNSON MATTHEY 2	CHESTER	10	54.8
LASKO METAL PRODUCTS	CHESTER	13	71.2
PENGUIN INDUSTRIES I	CHESTER	33	180.8
POLYMERIC SYSTEMS IN	CHESTER	22	120.5
THE BUDD COMPANY-POL	CHESTER	1	5.5
TURSACK PRINTING INC	CHESTER	13	71.2
CHESCO PRODUCTS INC	DELAWARE	20	109.6
DEE PAPER COMPANY IN	DELAWARE	20	109.6
PPG INDUSTRIES	DELAWARE	3	16.4
ZENITH METAL PRODUCT	DELAWARE	32	175.3
ALLEGRO MICROSYSTEMS	MONTGOMERY	27	147.9
AMERICAN BANK NOTE 1	MONTGOMERY	77	421.9
CENTENNIAL PRINTING	MONTGOMERY	13	71.2
COLORCON	MONTGOMERY	25	137.0
COOPER'S CREEK CHEMI	MONTGOMERY	44	241.1
DANA CORP 2	MONTGOMERY	18	98.6

DE MARCO INTERNATION	MONTGOMERY	21	115.1
FORD ELECTRONICS & R	MONTGOMERY	43	235.6
FORD ELECTRONICS & R	MONTGOMERY	25	137.0
FORMS INC	MONTGOMERY	22	120.5
GANNETT SATELLITE IN	MONTGOMERY	38	208.2
HANDY & HARMAN TUBE	MONTGOMERY	117	641.1
JOHN EVANS SONS INC	MONTGOMERY	11	60.3
NATIONAL LABEL CO	MONTGOMERY	63	345.2
NORRISTOWN HERALD IN	MONTGOMERY	23	126.0
PECORA CORPORATION	MONTGOMERY	10	54.8
PENN COLOUR GRAPHICS	MONTGOMERY	12	65.8
PENNSBURG WOODCRAFT	MONTGOMERY	49	268.5
PHILADELPHIA GEAR CO	MONTGOMERY	12	65.8
PLUMMER PRECISION OP	MONTGOMERY	78	427.4
PRECISION TUBE CO IN	MONTGOMERY	10	54.8
REILLY-WHITEMAN INC	MONTGOMERY	12	65.8
SCATTON BROS MFG CO	MONTGOMERY	10	54.8
SCHLOSSER STEEL INC	MONTGOMERY	14	76.7
SONOCO PRODUCTS CO 2	MONTGOMERY	37	202.7
STABILUS	MONTGOMERY	13	71.2
STANLEY G FLAGG & CO	MONTGOMERY	14	76.7
SUPERIOR METAL PRODU	MONTGOMERY	43	235.6
UNIFORM TUBES INC	MONTGOMERY	12	65.8
UNITED ROPEWORKS USA	MONTGOMERY	11	60.3
WILLIAM M WILSON'S S	MONTGOMERY	29	158.9
WOODRITE INC	MONTGOMERY	11	60.3
TOTALS		2314	12679.5

LISTING OF NOx AND CO FACILITIES *INCLUDED IN* ZONE 1

Firm name	1990 CO Emissions tons/year	1990 CO Emissions lbs/day	1990 NOx Emissions tons/year	1990 NOx Emission lbs/day
UNITED STATES STEEL CORP., TH	17991	237099	1742	17285
LUKENS STEEL CO.	7276	46495	6	135
FLAGG, STANLEY G. & CO.	3084	25381	2	17
SUN REFINING & MARKETING CO.	864	5048	3592	20928
BP OIL, INC.	450	2504	2525	14028
TRANSCONTINENTAL GAS PIPE LIN	389	2575	3084	20462
PHILADELPHIA ELECTRIC CO.	349	5253	7952	95007
MERCK SHARP & DOHME	133	1322	254	3643
WARNER CO.	125	1098	188	1647
SCOTT PAPER CO.	121	1341	2908	28583
PHILADELPHIA ELECTRIC CO.	76	1048	1797	22102
PHILADELPHIA ELECTRIC CO.	56	1497	248	6619
CONGOLEUM CORP.	50	8836	253	43853
COLUMBIA GAS TRANSMISSION COR	49	282	387	2234
COGENERATION PARTNERS OF AMER	42	260	311	1943
OCCIDENTAL CHEMICAL CORP.	13	188	361	3412
COLUMBIA GAS TRANSMISSION COR	13	231	101	1812
SONOCO PRODUCTS CO., DWNGTWN	11	70	354	2346
SIMPSON PAPER CO.	9	71	103	779

ANCHOR GLASS CONTAINER CORP	6	52	186	1618
PQ CORP.	3	22	262	2255
	31110	340673	26616	290000

Dave Arnold
File: PA-93

TECHNICAL DISCUSSION OUTLINE

USEPA Briefing
Pennsylvania Air Quality Management Program

June 30, 1993

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1. Technical Objectives of the Program

   a. Robust Technical Approach
      - Meet or Exceed Guidance Requirements
      - Utilize Appropriate Transportation Analysis Tools
      - Utilize Available Transportation Data
      - Provide Appropriate Linkage Between Transportation and Emissions Models
      - Balance the Level of Detail (Planning vs. Operations)

   b. Consistency Among Applications
      - SIP
      - Conformity
      - Other

   c. Appropriate Forecast Sensitivity to Program Elements

   d. Manageable User Interface
      - Database
      - Batch Operation
      - Report Flexibility

2. The Post Processor for Air Quality (PPAQ)

   a. RMS / PPAQ Database
      - State Highway + Turnpike Segments
      - Traffic / Physical Attributes
      - HPMS / Seasonal / Daily Adjustments

   b. Growth Projections
      - DVRPC / SPRPC Regions
      - Other Areas

   c. VMT Aggregation
      - Geography
      - Functional Class
      - Time of Day

   d. PPAQ Functions
      - VMT Aggregation
      - Speed Estimation
      - Driving MOBILE
      - Output Post Processing

TECHNICAL DISCUSSION OUTLINE
(Continued)

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3. MOBILE Specifications

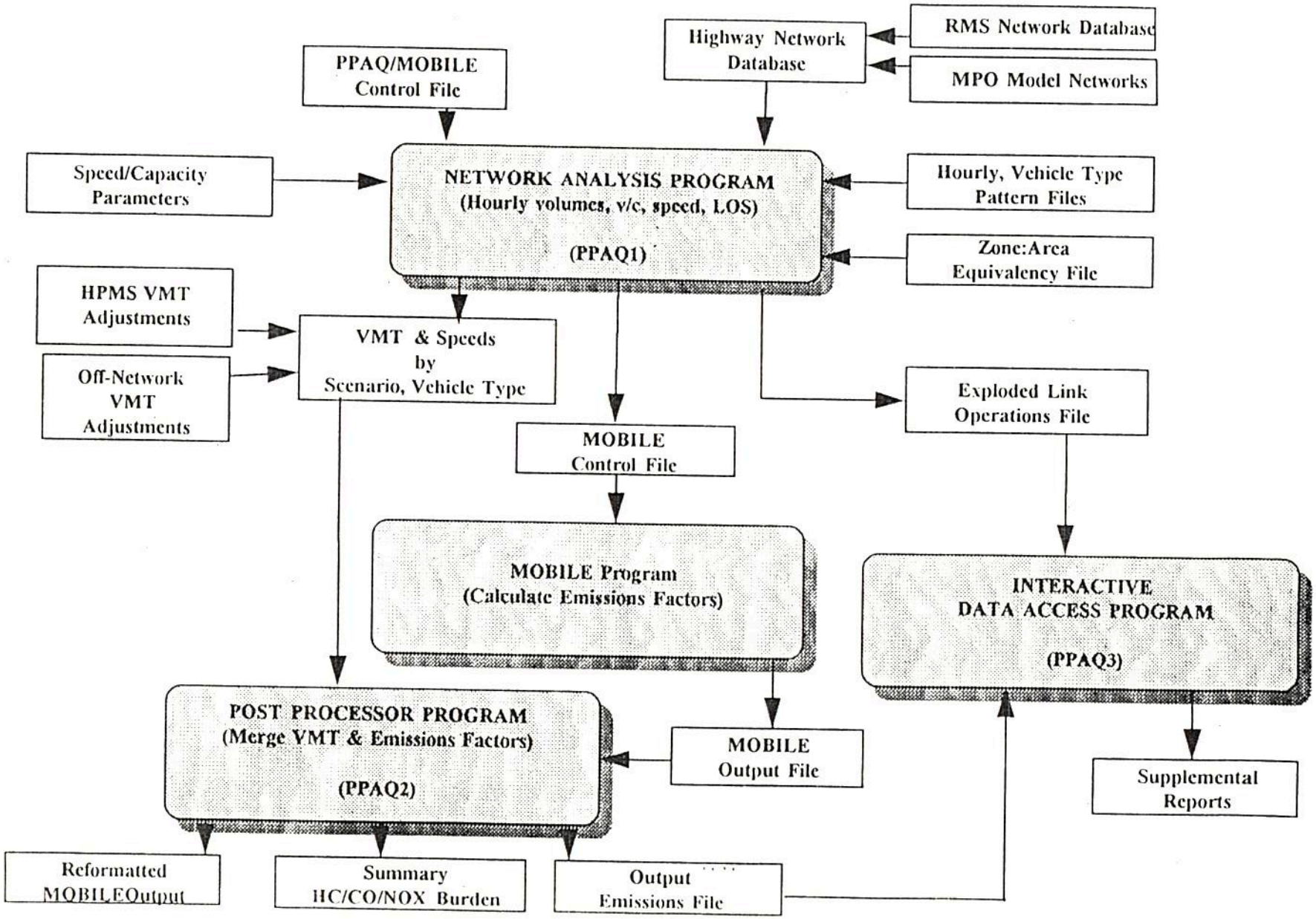
    a. Inspection / Maintenance Program
        - Stringency / Waiver / Compliance
        - Cut Points
        - Anti-Tampering
    b. Fuels (RVP)
    c. Vehicle Registration Data
    d. Stage II VRS

4. Other Issues

    a. Preparation of Inputs to AMS / UAM
    b. Conformity

5. General Discussion

PPAQ / MOBILE SYSTEM LAYOUT



PPAQ / MOBILE SYSTEM FUNCTIONS

A. Volume Development

For each highway segment:

1. Disaggregate daily / peak volume to 24 hourly volumes
2. If peak volumes available, adjust pattern-based hourly volumes to match peaks while maintaining 24-hour total volume
3. If pre-adjustments to VMT, adjust hourly link volumes
4. (Optional) Apply link-specific TDM adjustments to peak period volumes
5. Disaggregate hourly volumes to vehicle types
6. (Optional) Disaggregate hourly volumes to cold / hot operating mode based on link-specific cold / hot volumes

B. Speed Determination

For each highway segment:

1. Obtain link (midblock) capacities and free speeds from Facility Type / Area Type / Lanes lookup table
2. For each hourly volume, calculate mid-block v/c ratio

If control device is on link:

3. Obtain characteristics (i.e. lanes, g/c, cycle, progression, signal spacing) from link attributes or lookup table
4. Calculate intersection approach capacity and v/c ratio
5. If any hourly volumes over capacity, apply peak spreading model. Recalculate hourly v/c ratios
6. Calculate link travel time and intersection delay, using 1985 Highway Capacity Manual and supplemental delay algorithms
7. Calculate link speed (for each hour)
8. (Optional) Output link and intersection approach operation data, by hour

PPAQ / MOBILE SYSTEM FUNCTIONS
(continued)

C. VMT Accumulation

1. Attach each link to a facility group and area
2. Accumulate VMT (by vehicle type, operating mode) and VHT for each area group, facility group, and time period
3. For each cell, calculate average speed, vehicle type percentages, cold / hot start fractions
4. (Optional) Input cold / hot start fraction table to calculate cell fractions by area / facility type
5. Apply VMT and speed adjustments from externally prepared file (i.e. HPMS reconciliation, off-network VMT, TCM effects)

D. MOBILE Run

1. Input MOBILE setup and vehicle technology shell (Control and One-Time sections, plus one Scenario)
2. Input ambient / minimum / maximum temperature data by area and time of day
3. Output MOBILE Setup File
4. For each active area group / facility group / time period, generate MOBILE scenario records; insert scenario-specific speed, cold / hot operating fractions, vehicle type, temperatures
5. Attach scenario VMT (by vehicle type) for future processing
6. If time-of-day processing, generate 24-hour scenario to calculate daily diurnal emissions
7. Run MOBILE (managed with keystroke buffer)

PPAQ / MOBILE SYSTEM FUNCTIONS
(continued)

E. Post-Processing of Output

1. If time-of-day processing, allocate daily diurnal emissions to time periods
2. Reformat output, calculate emissions quantities
3. (Optional) If multiple MOBILE runs specified, re-execute MOBILE with next setup
4. Generate Emissions Database (VMT, speed, emissions, HC detail, supplemental emissions factors)
5. Generate summary reports, input files for spreadsheets, GIS, etc.

MOBILE5 PROGRAM PARAMETERS FOR SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

	1990 Actual	1990 Adjusted Inventory	1996 Baseline Projection	1996 Proposed Control Strategy
CONTROL FLAGS				
TAMFLG 1 = Use Default, 2 = Input	1	1	1	1
SPDFLG 1 = One Speed All Veh Types	1	1	1	1
VMFLAG 1 = Use Default, 2 = One mix for each scenario	2	2	2	2
MYRMRFG 1 = Use Default, 3 = Input Registration Data	1	1	1	1
NEWFLG 1 = Use Default BER's, 5 = Disable CAAA BER's	1	5	5	1
IMFLAG 1 = No I/M, 2 = One I/M, 3 = Two I/M	2	2	2	3
ALHFLG 1 = No Emission Factor Adjustments	1	1	1	1
ATPFLG 1 = No ATP, 8 = ATP Pressure & Purge Checks	1	1	1	8
RLFLAG 1 = Uncontrolled Refueling, 2 = Stage II VRS, 5 = Not Modelled (Area Source)	5	5	5	5
TEMFLG 1 = Weighted Temps	1	1	1	1
NMHFLG 3 = VOC's	3	3	3	3

MOBILE5 PROGRAM PARAMETERS FOR SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

	1990 Actual	1990 Adjusted Inventory	1996 Baseline Projection	1996 Proposed Control Strategy	
ONE-TIME DATA:					
Alternate BER Record:	None	None	None	None	
				I/M Record	
I/M Descriptive Records:				#1	#2
Program Start Year	84	84	84	95	95
Stringency Level	18.3	18.3	18.3	20	20
First Model Year	68	68	68	68	77
Last Model Year	20	20	20	76	20
Waiver Rate, Pre-77 Vehs (%)	11.0	11.0	11.0	3.0	3.0
Waiver Rate, Post-77 Vehs (%)	11.8	11.8	11.8	3.0	3.0
Compliance Rate (%)	91	91	91	96	96
Program Type 1 = Test Only 2 = Test & Repair (Computerized)	2	2	2	1	1
Inspection Frequency 1 = Annual, 2 = Biennial	1	1	1	2	2
Veh. Types Subject to Inspection (1=No, 2=Yes)					
LDGV	2	2	2	2	2
LDGT1	2	2	2	2	2
LDGT2	2	2	2	2	2
HDGV	1	1	1	1	1
Test Type 1 = Idle, 4 = IM240	1	1	1	1	4
Non-Default Cut Points (1=No, 2=Yes)	1	1	1	1	2
Alt. I/M Credit Flags (1=Use Default, 2=Input)					
File 1	1	1	1	1	1
File 2	1	1	1	1	1
Cutpoint for HC	None	None	None	None	0.80
Cutpoint for CO	None	None	None	None	15.00
Cutpoint for NOX	None	None	None	None	2.00

MOBILE5 PROGRAM PARAMETERS FOR SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

	1990 Actual	1990 Adjusted Inventory	1996 Baseline Projection	1996 Proposed Control Strategy
ONE TIME DATA (Cont'd):				
ATP Descriptive Record:	None	None	None	
Program Start Year				95
First Model Year				77
Last Model Year				20
Veh. Types Subject to Inspection: (1=No, 2=Yes)				
LDGV				2
LDGT1				2
LDGT2				2
HDGV				1
Program Type (1=Test Only, 2=Test and Repair)				1
Inspection Frequency (1=Annual, 2=Biennial)				2
Compliance Rate (%)				96
Inspections Performed (1=No, 2=Yes)				
Air Pump System				1
Catalyst				2
Fuel Inlet Restrictor				2
Tailpipe Lead Deposit Test				1
EGR System				1
Evaporative Emission Control System				1
PCV System				1
Gas Cap				1
Functional Pressure Test Record:	None	None	None	
Start Year				95
First Model Year				77
Last Model Year				20
Veh. Types Subject to Inspection (1=No,2=Yes)				
LDGV				2
LDGT1				2
LDGT2				2
HDGV				1
Program Type (1=Test Only, 2=Test and Repair)				1
Inspection Frequency (1=Annual, 2=Biennial)				2
Compliance Rate (%)				96

MOBILE5 PROGRAM PARAMETERS FOR SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

	1990 Actual	1990 Adjusted Inventory	1996 Baseline Projection	1996 Proposed Control Strategy
ONE-TIME DATA (Cont'd):				
Functional Purge Test Record:	None	None	None	
Start Year				95
First Model Year				77
Last Model Year				20
Veh. Types Subject to Inspection (1=No, 2=Yes)				
LDGV				2
LDGT1				2
LDGT2				2
HDGV				1
Program Type (1=Test Only, 2=Test and Repair)				1
Inspection Frequency (1=Annual, 2=Biennial)				2
Compliance Rate (%)				96
Stage II & Onboard VRS Records:	None	None	None	None

MOBILE5 PROGRAM PARAMETERS FOR SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

	1990 Actual	1990 Adjusted Inventory	1996 Baseline Projection	1996 Proposed Control Strategy
SCENARIO DATA:				
Scenario Record:				
Region (1 = Low Altitude)	1	1	1	1
Calendar Year	90	96	96	96
Average Speed	*	*	*	*
(* Varies; Calculated from Network by PPAQ)				
Ambient Temperature	*	*	*	*
(* Varies by County and Time of Day)				
Operating Mode Fractions				
Non−Catalyst, Cold Start	20.6	20.6	20.6	20.6
Catalyst, Hot Start	27.3	27.3	27.3	27.3
Catalyst, Cold Start	20.6	20.6	20.6	20.6
Month of Evaluation	7	7	7	7
LEV Program Parameter Record:	None	None	None	None
Local Area Parameter Record:				
Scenario Name (* Generated by PPAQ)	*	*	*	*
ASTM Class	C	C	C	C
Minimum Daily Temperature	*	*	*	*
Maximum Daily Temperature	*	*	*	*
(* Varies by County and Time of Day; See attached memo for handling of diurnal emissions by time of day)				
Period 1 RVP (psi)	10.5	9.0	9.0	8.7
Period 2 RVP (psi)	10.5	9.0	9.0	8.7
Period 2 Start Year	20	20	20	20
Oxygenated Fuel Flag (1=No, 2=Yes)	1	1	1	1
Diesel Sales Fraction Flag (1=No, 2=Yes)	1	1	1	1
Reformulated Gasoline Flag (1=No, 2=Yes)	1	1	1	2
Oxygenated Fuels Record:	None	None	None	None
Diesel Sales Fractions Record:	None	None	None	None
VMT Mix by Vehicle Type	*	*	*	*
(* Varies; Calculated from Network by PPAQ)				
Additional Correction Factor Record:	None	None	None	None

MOBILE5 PROGRAM PARAMETERS FOR SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

Air Quality District	Non–Attainment Area (Weather Station)	Summer Daily Temperatures Maximum	Minimum	Ambient
1. Bucks, Chester, Delaware, Montgomery Philadelphia	Philadelphia	96	71	88
2. Berks	Reading (Harrisburg)	96	69	87
3. Lancaster	Lancaster (Harrisburg)	96	67	86
4. Carbon, Lehigh, Northampton	Allentown	94	67	85
5. Adams, Franklin, York	York (Harrisburg)	93	66	84
6. Cumberland, Dauphin, Lebanon, Perry	Harrisburg	97	69	88
7. Columbia, Lackawanna, Luzerne, Schuylkill, Susquehanna, Wayne, Wyoming	Scranton (Allentown)	95	67	85
8. Bedford, Blair, Fulton, Huntingdon, Juniata, Mifflin	Altoona (Pittsburgh)	95	65	85
9. Cameron, Centre, Clearfield, Clinton	Altoona (Pittsburgh)	95	65	85
10. Bradford, Lycoming, Potter, Sullivan, Tioga	Scranton (Allentown)	95	67	85
11. Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Washington, Westmoreland	Pittsburgh	95	63	84
12. Clarion, Lawrence, Mercer, Venango	Youngstown (Pittsburgh)	94	67	85
13. Crawford, Elk, Erie, Forest, McKean, Warren	Erie	86	62	78
14. Cambria, Indiana, Somerset	Johnstown (Pittsburgh)	95	68	86

INSPECTION / MAINTENANCE PROGRAM STATUS
SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

	1990 Actual	1990 Adjusted Inventory	1996 Baseline Projection	1996 Proposed Control Strategy
AQ Zone 1				
Bucks	Yes	Yes	Yes	EI/M
Chester	Yes	Yes	Yes	EI/M
Delaware	Yes	Yes	Yes	EI/M
Montgomery	Yes	Yes	Yes	EI/M
Chester	Yes	Yes	Yes	EI/M
AQ Zone 2				
Berks	No	No	No	EI/M
AQ Zone 3				
Lancaster	No	No	No	EI/M
AQ Zone 4				
Carbon	No	No	No	No
Lehigh	Zip–Code	Zip–Code	Zip–Code	EI/M
Northampton	Zip–Code	Zip–Code	Zip–Code	EI/M
AQ Zone 5				
Adams	No	No	No	No
Franklin	No	No	No	No
York	No	No	No	EI/M
AQ Zone 6				
Cumberland	No	No	No	EI/M
Dauphin	No	No	No	EI/M
Lebanon	No	No	No	EI/M
Perry	No	No	No	No
AQ Zone 7				
Columbia	No	No	No	No
Lackawanna	No	No	No	EI/M
Luzerne	No	No	No	EI/M
Monroe	No	No	No	No
Pike	No	No	No	No
Schuylkill	No	No	No	No
Susquehanna	No	No	No	No
Wayne	No	No	No	No
Wyoming	No	No	No	No

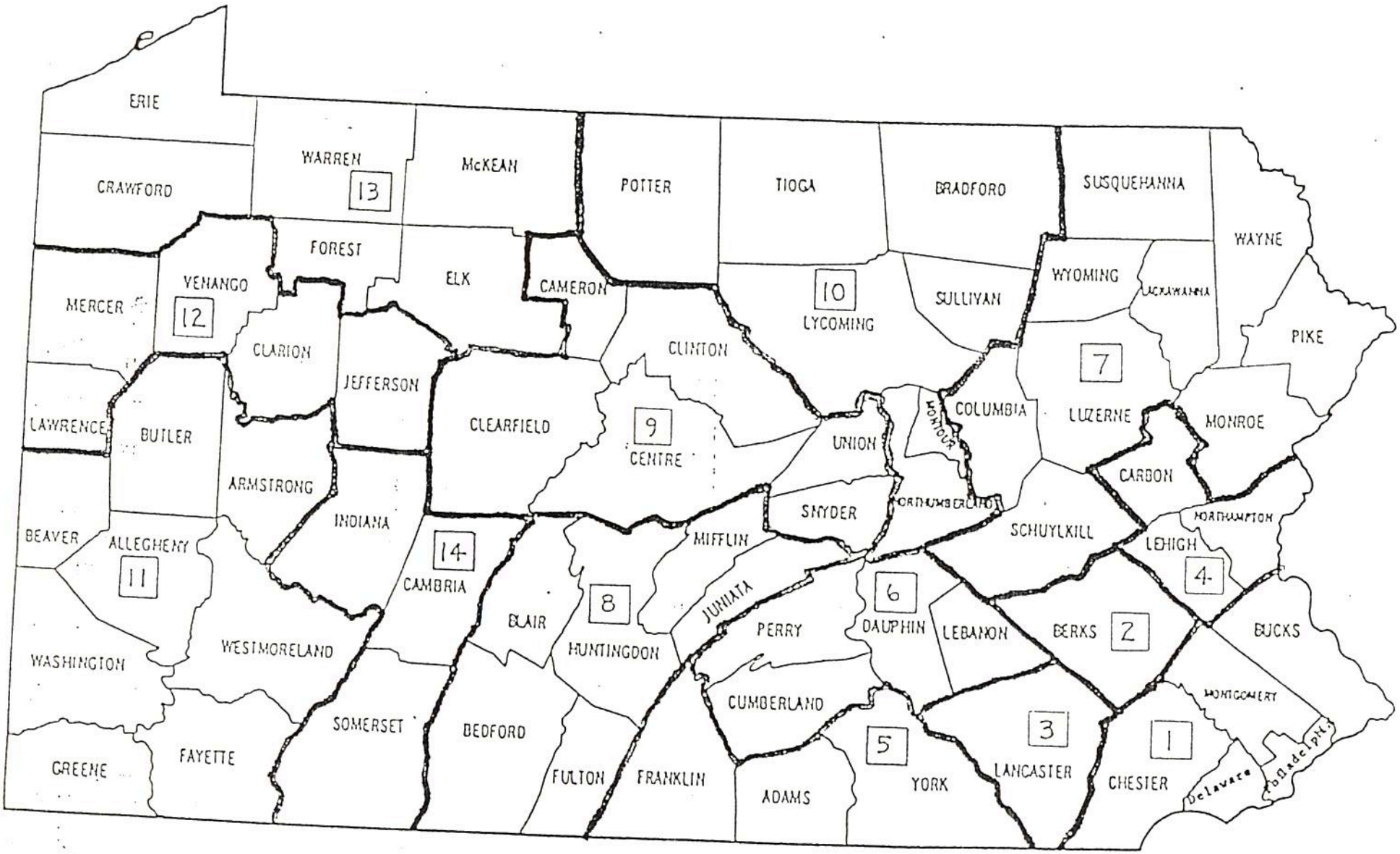
INSPECTION / MAINTENANCE PROGRAM STATUS
SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

	1990 Actual	1990 Adjusted Inventory	1996 Baseline Projection	1996 Proposed Control Strategy
AQ Zone 8				
Bedford	No	No	No	No
Blair	No	No	No	EI/M
Fulton	No	No	No	No
Huntingdon	No	No	No	No
Juniata	No	No	No	No
Mifflin	No	No	No	No
AQ Zone 9				
Cameron	No	No	No	No
Centre	No	No	No	EI/M
Clearfield	No	No	No	No
Clinton	No	No	No	No
Snyder	No	No	No	No
Union	No	No	No	No
AQ Zone 10				
Bradford	No	No	No	No
Lycoming	No	No	No	EI/M
Montour	No	No	No	No
Northumberland	No	No	No	No
Potter	No	No	No	No
Sullivan	No	No	No	No
Tioga	No	No	No	No

INSPECTION / MAINTENANCE PROGRAM STATUS
SIP INVENTORY, FORECAST, AND BUDGET
PennDOT Air Quality Development Project

	1990 Actual	1990 Adjusted Inventory	1996 Baseline Projection	1996 Proposed Control Strategy
AQ Zone 11				
Allegheny	Yes	Yes	Yes	EI/M
Armstrong	No	No	No	No
Beaver	Zip-Code	Zip-Code	Zip-Code	EI/M
Butler	No	No	No	No
Fayette	No	No	No	No
Greene	No	No	No	No
Washington	Zip-Code	Zip-Code	Zip-Code	EI/M
Westmoreland	Zip-Code	Zip-Code	Zip-Code	EI/M
AQ Zone 12				
Clarion	No	No	No	No
Jefferson	No	No	No	No
Lawrence	No	No	No	No
Mercer	No	No	No	EI/M
Venango	No	No	No	No
AQ Zone 13				
Crawford	No	No	No	No
Elk	No	No	No	No
Erie	No	No	No	EI/M
Forest	No	No	No	No
McKean	No	No	No	No
Warren	No	No	No	No
AQ Zone 14				
Cambria	No	No	No	EI/M
Indiana	No	No	No	No
Somerset	No	No	No	No

Note:
Zip-Code = Inspection required by zipcode of registration (partial counties)
EI/M = Enhanced Inspection / Maintenance Program (full county)


ERIE
WARREN
13
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SUSQUEHANNA
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FOREST
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CAMERON
10
LYCOMING
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WYOMING
LACKAWANNA
PIKE
MERCER
VENANGO
12
CLARION
JEFFERSON
CLINTON
7
LUZERNE
MONROE
LAWRENCE
BUTLER
CLEARFIELD
9
CENTRE
UNION
MONTOUR
COLUMBIA
CARBON
ARMSTRONG
INDIANA
SNYDER
NORTHUMBERLAND
SCHUYLKILL
NORTHAMPTON
BEAVER
ALLEGHENY
11
14
CAMBRIA
MIFFLIN
LEHIGH
4
JUNIATA
8
BLAIR
6
DAUPHIN
LEBANON
BERKS
2
BUCKS
WASHINGTON
WESTMORELAND
HUNTINGDON
PERRY
CUMBERLAND
MONTGOMERY
SOMERSET
BEDFORD
5
YORK
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LANCASTER
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CHESTER
GREENE
FAYETTE
FULTON
FRANKLIN
ADAMS
Delaware
Philadelphia

PROPOSED PROCEDURE FOR TIME-OF-DAY CALCULATION OF DIURNAL EMISSIONS

The following procedure for calculating diurnal, or evaporative, emissions was suggested by Mike Wimberly and Jim Wilson of E.H. Pechan & Associates, of Springfield, VA. The procedure preserves the current time-of-day analysis by PPAQ / MOBILE5, which affords improved sensitivity to temporal speed variations. At the same time, it eliminates a double counting of diurnal emissions caused by MOBILE5's assumption of a full 24-hour analysis.

In previous PPAQ versions emissions were calculated for separate time periods and summed to a daily total. Different speed arrays and VMT mixes were used for each of these time periods, but the minimum and maximum daily temperature values remained constant. Using MOBILE5 in this manner generally causes an overestimation of HC emissions, as the model is designed to generate a daily emission factor based on the minimum and maximum daily temperatures. This is because the HC emission factor includes a diurnal component, which represents evaporative emissions that occur over the course of an entire day due to increasing ambient temperature. Generating three emission factors for each day causes the daily diurnal emissions to be factored into the total daily emissions three separate times.

The recommended means of correcting this problem is to perform additional calculations which allocate daily diurnal emissions to the various time periods. In order to use this method, minimum and maximum temperatures are required for each of four time periods, in addition to the daily minimum and maximum temperatures. MOBILE5 is then run at all five temperature ranges, as outlined in the example below:

		Daily Min	Daily Max
Run 1	24-hour	63	98
		Starting Temp.	Ending Temp.
Run 2	A.M. Peak	75.3	85.8
Run 3	Midday	90.3	98.0
Run 4	P.M. Peak	85.8	93.1
Run 5	Night	63.0	81.9

Run 1 is made in order to calculate the daily diurnal emissions. Diurnal emissions are given in grams/vehicle/day in the expanded evaporative emissions section of the MOBILE5 output file. The diurnal emissions value can be converted into a grams/mile emission factor by dividing it by the MOBILE5 default daily mileage for each vehicle type:

$$EF_d = E_d / MV$$

EF_d = diurnal HC emissions factor (grams/mile)
E_d = daily diurnal HC emissions (grams/vehicle)
MV = MOBILE5 default daily mileage (miles/vehicle)

MOBILE5 Default Average Daily Vehicle Mileage

Vehicle Type	Average Daily Mileage (mile/day)
LDGV	31.1
LDGT1	26.3
LDGT2	33.7
HDGV	36.7
LDDV	31.1
LDDT	29.8
HDDV	138.3
MC	8.3

Diurnal emission factors must be calculated in the same manner for Runs 2 through 5, and the diurnal emission factors must be subtracted from the total HC emission factor as shown below. This is necessary because the diurnal emission factor generated by the model for each of these time periods represents diurnal emissions for the entire day.

$$EF_n = EF_t - EF_d$$

EF_n = HC emission factor (no diurnal emissions) (grams/mile)
EF_t = total HC emissions factor (grams/mile)
EF_d = diurnal HC emissions factor (grams/mile)

For time periods in which the ending temperature is lower than the starting temperature, diurnal emissions are assumed to be zero and EF_n can be used as the actual emissions factor for that time period. This would include the p.m. peak and nighttime periods in the previous example.

For time periods in which ending temperature is higher than the starting temperature, the actual HC can be calculated in the following manner:

$$EF_A = EF_N + (EF_D * (DT_p / DT_d))$$

EF_A = actual HC emissions factor (grams/mile)
EF_N = HC emissions factor (no diurnal emissions) (grams/mile)
DT_p = increase in temperature over the current time period (degrees)
DT_d = max daily temperature - min daily temperature

This formula adds in a fraction of the daily diurnal emission factor, depending on the fraction of the daily temperature increase that takes place during the current time period.

PPAQ has been revised to generate the additional 24-hour MOBILE5 step, and to automatically adjust the time-period VOC emissions rates according to the above formula, so that all calculations are made within a standard run without user intervention.

```
1    prompt
1990 Actual With I/M
1    tamflg
1    spdflg
2    vmflag
1    mymrfg
1    newflg
2    imflag
1    alhflg
1    atpflg
5    rlflag
1    locflg -- Must be 1
1    temflg
3    outfmt -- Must be 3; Overridden by PPAQ1
4    prtflg
1    idlflg
3    nmhflg
3    hcflag
84 18 68 20 11 12 091 2 1 2221 1111                    I/M Record
SCENARIO
1 90 00.0 0.00 20.6 27.3 20.6  7                       Scenario Record
[XXXXXXXXXXX]    C  00.  00. 10.5 10.5 20 1 1 1        LAP Record
0.00                                                   Veh. Type Record
END
```

Scenarios are repeated for 67 Counties x 3 Urban/Small Urban/Rural x 6 Functional Classes x 4 Time Periods

```
1    prompt
1990 Actual Without I/M
1    tamflg
1    spdflg
2    vmflag
1    mymrfg
1    newflg
1    imflag
1    alhflg
1    atpflg
5    rlflag
1    locflg -- Must be 1
1    temflg
3    outfmt -- Must be 3; Overridden by PPAQ1
4    prtflg
1    idlflg
3    nmhflg
3    hcflag
SCENARIO
1 00 00.0 0.00 20.6 27.3 20.6  7                    Scenario Record
[XXXXXXXXXXX]    C  00.  00. 10.5 10.5 20 1 1 1     LAP Record
0.00                                                Veh. Type Record
END
```

Scenarios are repeated for 67 Counties x 3 Urban/Small Urban/Rural x 6 Functional Classes x 4 Time Periods

```
 1    prompt
 1990 Adjusted With I/M
 1    tamflg
 1    spdflg
 2    vmflag
 1    mymrfg
 5    newflg
 2    imflag
 1    alhflg
 1    atpflg
 5    rlflag
 1    locflg -- Must be 1
 1    temflg
 3    outfmt -- Must be 3; Overridden by PPAQ1
 4    prtflg
 1    idlflg
 3    nmhflg
 3    hcflag
84 18 68 20 11 12 091 2 1 2221 1111                    I/M Record
SCENARIO
1 96 00.0 00.0 20.6 27.3 20.6  7                       Scenario Record
[XXXXXXXXXXX]    C  00.  00.  9.0  9.0 20 1 1 1       LAP Record
0.00                                                   Veh. Type Record
END
```

Scenarios are repeated for 67 Counties x 3 Urban/Small Urban/Rural x 6 Functional Classes x 4 Time Periods

```
1    prompt
1990 Adjusted Without I/M
1    tamflg
1    spdflg
2    vmflag
1    mymrfg
5    newflg
1    imflag
1    alhflg
1    atpflg
5    rlflag
1    locflg -- Must be 1
1    temflg
3    outfmt -- Must be 3; Overridden by PPAQ1
+    prtflg
1    idlflg
3    nmhflg
5    hcflag
SCENARIO
1 96 00.0 00.0 20.6 27.3 20.6  7                          Scenario Record
[XXXXXXXXXXX]    C  00.  00.  9.0  9.0 20 1 1 1           LAP Record
0.00                                                      Veh. Type Record
END
```

Scenarios are repeated for 67 Counties x 3 Urban/Small Urban/Rural x 6 Functional Classes x 4 Time Periods

```
 1    prompt
 1996 Baseline Projection -- I/M Counties
 1    tamflg
 1    spdflg
 2    vmflag
 1    mymrfg
 5    newflg
 2    imflag
 1    alhflg
 1    atpflg
 5    rlflag
 1    locflg -- Must be 1
 1    temflg
 3    outfmt -- Must be 3; Overridden by PPAQ1
 4    prtflg
 1    idlflg
 3    nmhflg
 3    hcflag
84 18 68 20 11 12 091 2 1 2221 1111                    I/M Record
SCENARIO
1 00 00.0 0.00 20.6 27.3 20.6  7                       Scenario Record
[XXXXXXXXXXX]     C  00.  00.  9.0  9.0 20 1 1 1      LAP Record
0.00                                                   Veh. Type Record
END
```

Scenarios are repeated for 67 Counties x 3 Urban/Small Urban/Rural x 6 Functional Classes x 4 Time Periods

```
 1    prompt
 1996 Baseline Projection -- No I/M
 1    tamflg
 1    spdflg
 2    vmflag
 1    mymrfg
 5    newflg
 1    imflag
 1    alhflg
 1    atpflg
 5    rlflag
 1    locflg -- Must be 1
 1    temflg
 3    outfmt -- Must be 3; Overridden by PPAQ1
 4    prtflg
 1    idlflg
 3    nmhflg
 3    hcflag
SCENARIO
1 96 00.0 0.00 20.6 27.3 20.6  7                    Scenario Record
[XXXXXXXXXXX]    C  00.  00.  9.0  9.0 20 1 1 1     LAP Record
0.00                                                Veh. Type Record
END
```

Scenarios are repeated for 67 Counties x 3 UrbUrban/Rural x 6 Functional Classes x 4 Time Periods

```
1    prompt
1996 Proposed Control Strategy -- With I/M
1    tamflg
1    spdflg
2    vmflag
1    mymrfg
1    newflg
3    imflag
1    alhflg
8    atpflg
5    rlflag
1    locflg -- Must be 1
1    temflg
3    outfmt -- Must be 3; Overridden by PPAQ1
4    prtflg
1    idlflg
3    nmhflg
3    hcflag
95 20 68 76  3  3 096 1 2 2221 1111
95 20 77 20  3  3 096 1 2 2221 4211 0.80 15.0 2.00
95 77 20 2221 12  096 12211111
95 77 20 2221 12  096
95 77 20 2221 12  096
SCENARIO
1 96 00.0 0.00 20.6 27.3 20.6  7
[XXXXXXXXXXX]    C  00.  00.  8.7  8.7 20 1 1 2
0.00
END
```

I/M Record #1
I/M Record #2
ATP Record
Pressure Test Record
Purge Test Record

Scenario Record
LAP Record
Veh. Type Record

Scenarios are repeated for 67 Counties x 3 Urban/Small Urban/Rural x 6 Functional Classes x 4 Time Periods

```
1    prompt
1996 Proposed Control Strategy -- No I/M
1    tamflg
1    spdflg
2    vmflag
1    mymrfg
1    newflg
1    imflag
1    alhflg
1    atpflg
5    rlflag
1    locflg -- Must be 1
1    temflg
3    outfmt -- Must be 3; Overridden by PPAQ1
4    prtflg
1    idlflg
3    nmhflg
3    hcflag
SCENARIO
1 96 00.0 0.00 20.6 27.3 20.6  7                    Scenario Record
[XXXXXXXXXXX]    C  00.  00.  8.7  8.7 20 1 1 2     LAP Record
0.00                                                 Veh. Type Record
END
```

Scenarios are repeated for 67 Counties x 3 Urban/Small Urban/Rural x 6 Functional Classes x 4 Time Periods

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

MAY 12 1993

Honorable Arthur A. Davis
Secretary
Pennsylvania Department of Environmental Resources
Commonwealth of Pennsylvania
Fulton Building, 9th Floor
3rd & Locust Streets
P.O. Box 2063
Harrisburg, Pennsylvania 17120-2063

Dear Mr. Davis:

We understand that the Commonwealth has formed a Low Emissions Vehicle (LEV) Commission to study whether the Commonwealth should adopt the California LEV standards. The Environmental Protection Agency (EPA) Region III fully supports the adoption of the California LEV standards in the Commonwealth. Cleaner cars are a critical part of a comprehensive plan to improve Pennsylvania's air quality.

The widespread ozone problem which exists in the Commonwealth and the severity of the ozone problem in the Philadelphia metropolitan area warrant adoption of the California LEV standards. Therefore, EPA wishes to commend Pennsylvania for its foresight in seeking to adopt the most advanced technology-based vehicle controls available. In the absence of such controls, the Commonwealth and its contiguous States, may be forced to impose restrictions on motor vehicle usage, curtail transportation projects, and/or strengthen industrial source emissions controls beyond Reasonably Available Control Technology (RACT) in order to meet the health-based national ambient air quality standard for ozone.

Improved motor vehicle-based technology has the potential to reduce, on a continuing basis, the impact of emissions due to growth in vehicle usage. Therefore, imposing vehicle technology-based controls is the most effective way to reduce the impact of every additional vehicle mile driven.

The LEV program offers several long-term benefits for states in the ozone transport region (OTR), by not only significantly reducing volatile organic compound (VOC) emissions but by additionally offering significantly greater reductions in nitrogen oxides (NOx) when compared to the federal Tier I vehicle emission standards. These NOx reductions can aid in reducing ozone formation in the OTR. In addition, these NOx reductions would result in a decrease to the airborne nitrogen loading to the Chesapeake Bay. As you are well aware, the eutrophication which threatens the Bay's species diversification and entire ecosystem is largely attributable to nitrogen deposition. The two major contributors of airborne nitrogen are large electric utilities and motor vehicles. Therefore, any measure to reduce NOx to the Chesapeake Bay should be undertaken to protect and preserve this national and regional treasure. Finally, LEV standards offer the added benefit of reducing air toxic emissions, including benzene, formaldehyde, and 1,3 butadiene, over the Tier I standards.

The LEV program offers Pennsylvania an additional strategy toward attaining and maintaining healthful air, a cleaner environment and a better quality of life. Should you need our assistance in supporting this important program, please call on us at anytime.

Sincerely,

Stanley L. Laskowski
Acting Regional Administrator

The LEV program offers several long-term benefits for states in the ozone transport region (OTR), by not only significantly reducing volatile organic compound (VOC) emissions but by additionally offering significantly greater reductions in nitrogen oxides (NOx) when compared to the federal Tier I vehicle emission standards. These NOx reductions can aid in reducing ozone formation in the OTR. In addition, these NOx reductions would result in a decrease to the airborne nitrogen loading to the Chesapeake Bay. As you are well aware, the eutrophication which threatens the Bay's species diversification and entire ecosystem is largely attributable to nitrogen deposition. The two major contributors of airborne nitrogen are large electric utilities and motor vehicles. Therefore, any measure to reduce NOx to the Chesapeake Bay should be undertaken to protect and preserve this national and regional treasure. Finally, LEV standards offer the added benefit of reducing air toxic emissions, including benzene, formaldehyde, and 1,3 butadiene, over the Tier I standards.

The LEV program offers Pennsylvania an additional strategy toward attaining and maintaining healthful air, a cleaner environment and a better quality of life. Should you need our assistance in supporting this important program, please call on us at anytime.

Sincerely,

Stanley L. Laskowski
Acting Regional Administrator

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SURNAME ▸	BUNKER	[redacted]	ARNOLD	SPINK	[redacted] WELSH	MASLANY	LASKOWSKI	
DATE ▸	5/4/93		5/4/93					

EPA Form 1320-1 (12-70) OFFICIAL FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Mr. James M. Salvaggio, Director
Bureau of Air Quality Control
Commonwealth of Pennsylvania
Department of Environmental Resources
400 Market Street
P.O. Box 8468
Harrisburg, Pennsylvania 17105-8468

APR 26 1993

Dear Mr. Salvaggio:

In reference to our letter of October 14, 1992 pertaining to EPA's comments on the Pennsylvania regulations for volatile organic compounds (VOC) and nitrogen oxides (NOx), an incorrect statement regarding nonattainment classifications and designations was made in the second paragraph of that letter. The statement should have said that section 181(a)(1) of the Clean Air Act requires that ozone design values used to designate and classify areas must be calculated in accordance with methodology issued by the Administrator. This methodology requires that the designations and classifications be based on the three year period from 1987 through 1989.

In determining whether a severe nonattainment area may be allowed an additional two years to attain the National Ambient Air Quality Standard, section 181(a)(2) prescribes the use of the 1988 ozone design value (defined as 1986 through 1988). The 1988 design value is not to be used to designate or classify an area in accordance with section 181(a)(1).

We hope this clarifies our previous statement and apologize for any inconvenience our previous statement may have caused. If you have further questions, please feel free to contact me at (215) 597-9075.

Sincerely,

Marcia L. Spink

Marcia L. Spink, Chief
Air Programs Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

MAR 16 1993

Honorable Arthur A. Davis, Secretary
Department of Environmental Resources
Bureau of Air Quality Control
Commonwealth of Pennsylvania
Market Street Office Building, 12th Floor
P.O. Box 8468
Harrisburg, Pennsylvania 17105-8468

Dear Mr. Davis:

On November 12, 1992, EPA received a revision to the Pennsylvania State Implementation Plan (SIP) from the Pennsylvania Department of Environmental Resources. This submittal consisted of the 1990 base year ozone and carbon monoxide (CO) emission inventories. The CO emission inventory was submitted by Philadelphia Air Management Services. EPA has determined that point, area, biogenics, non-road mobile and mobile source inventories were submitted for the ozone and CO nonattainment areas within the Commonwealth of Pennsylvania. Therefore, we have determined that the ozone and CO inventory submittal is technically complete.

It should be mentioned that a special case related to completeness involves the submittal of inventories that have not gone to public hearing. As discussed in EPA's November 5, 1992 policy memorandum, we have established a deferral of the public hearing requirement for emission inventories from November 15, 1992 to no later than November 15, 1993.

If members of your staff have any questions, they may direct them to Raymond Forde, Air Programs Branch, at (215) 597-8239. He is the principal contact for this rulemaking.

Sincerely,

Thomas J. Maslany, Director
Air, Radiation and Toxics Division

A DRIVE:COMPLETENESS DISC:PAEIL.RKF:3/1/93

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

MAR 0 8 1993

Mr. James M. Salvaggio, Director
Commonwealth of Pennsylvania
Department of Environmental Resources
Bureau of Air Quality Control
Market Street Office Building, 12th Floor
Post Office Box 8468
Harrisburg, Pennsylvania 17105-8468

Dear Mr. Salvaggio:

This is in response to your request of a one year extension from the November 15, 1993 deadline for the submission of an ozone attainment demonstration for Berks County. We understand that this request was made as a result of Pennsylvania's decision to complete the modeling analysis for Berks County in conjunction with the Urban Airshed Model (UAM) application for the Philadelphia/Southern New Jersey area.

As you know, current EPA policy allows a one year extension for states that opt to use the UAM to perform the required 1996 ozone attainment demonstrations for their intrastate moderate areas. These extensions are allowed provided the state:

1. has had its modeling protocol for the modeling area approved by EPA;

2. submits State Implementation Plan (SIP) revisions by November 15, 1993 which contain provisions for the required 15% reduction in VOC emissions by 1996, and provisions to show that the modeling effort is proceeding in a timely manner (i.e., presentation of the modeling protocol, episode selections, results of model performance tests, etc.);

3. submits SIP revisions by 1994 which contain measures to attain the ozone NAAQS by 1996 as demonstrated by application of the UAM to the nonattainment area.

EPA is prepared to grant the Commonwealth of Pennsylvania a one year extension to complete its modeling demonstration for the Berks County intrastate moderate nonattainment area, provided the guidelines outlined above are followed.

If your staff has any questions, please feel free to contact Todd Ellsworth at (215) 597-2906.

Sincerely,

Marcia L. Spink, Chief
Air Programs Branch

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

MAR 1 1993

Mr. John A. Pachuta, Director
Bureau of Motor Vehicles
Commonwealth of Pennsylvania
Department of Transportation
P.O. Box 8697
Harrisburg, Pennsylvania 17105

Dear Mr. Pachuta:

This is in response to your letter of December 30, 1992 concerning the Pennsylvania enhanced motor vehicle inspection and maintenance (I/M) program coverage area.

Section 184(b)(1)(A) of the Clean Air Act (the Act) requires that any state that is in an ozone transport region must implement enhanced I/M in any metropolitan statistical area (MSA) with a population of 100,000 or more. However, section 51.350(b)(1) of the I/M regulation promulgated by EPA on November 5, 1992 (57 FR 52950) does allow for exclusion, under certain conditions, of largely rural counties within a MSA. Specifically, this section states:

> "In an ozone transport region, the program shall entirely cover all counties within subject MSAs or subject portions of MSAs, as defined by OMB in 1990, except largely rural counties having a population density of less than 200 persons per square mile based on the 1990 Census can be excluded provided that at least 50% of the MSA population is included in the program."

In your letter, you indicated that the following counties have a population density of less than 200 persons per square mile and that the number found in parenthesis after each county is the percentage that the county represents of the MSA population:

Adams (19% of York MSA)
Carbon (8% of Allentown-Bethlehem MSA)
Centre (100% of State College MSA)
Columbia (9% of Scranton-Wilkes-Barre MSA)
Fayette (7% of Pittsburgh MSA)
Lycoming (100% of Williamsport MSA)
Mercer (100% of Sharon MSA)
Monroe (13% of Scranton-Wilkes-Barre MSA)
Perry (7% of Harrisburg-Lebanon-Carlisle MSA)
Somerset (32% of Johnstown MSA)
Wyoming (4% of Scranton-Wilkes-Barre MSA)

The question raised in your letter was whether some, all or parts of the these counties could be excluded from the enhanced I/M program under section 51.350(b)(1) of the I/M regulation and whether additional program features must be included in the Pennsylvania enhanced I/M program to allow this exclusion.

First, only entire counties can be excluded from the enhanced I/M program based upon the exclusion in section 51.350(b)(1) of the I/M regulation. Parts of largely rural counties cannot be excluded from the program. Based upon the information provided in the December 30, 1992 letter, eight of the eleven counties listed above qualify for the exclusion under section 51.350(b)(1) of the I/M regulation. The three counties that do not qualify for the exclusion are Centre, Lycoming and Mercer. Lastly, section 51.350(b)(1) does not require that additional program features be included in the program in order to allow this exclusion.

If you have any additional questions concerning this matter, please contact David Arnold at (215) 597-4556 or Kelly Bunker at (215) 597-4554.

Sincerely,

Thomas J. Maslany, Director
Air, Radiation & Toxics Division

cc: James Salvaggio, Director, PADER

bc. Gene Turney

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

JAN 25 1993

Mr. James M. Salvaggio, Director
Bureau of Air Quality Control
Commonwealth of Pennsylvania
Department of Environmental Resources
101 Second Street
P.O. Box 2357
Harrisburg, Pennsylvania 17120

Dear Mr. Salvaggio:

As you are aware, the Clean Air Act of 1990 (CAA) establish requirements for cleaner vehicles, fuels, and transportation alternatives. The clean fuel fleet program (CFF) establishes exhaust emission standards for certain fleet vehicles that are more stringent than those in place for the general vehicle population. Under this program, fleet owners and operators have a direct role in implementing the CAA to attain and maintain healthy air quality. It also provides an opportunity to break infrastructural barriers that have made it difficult to commercialize new vehicles and fuel technologies.

Under the fleet program, a percentage of new vehicles purchased by the covered fleet owners will be required to meet lower tailpipe standards beginning in 1998. The CAA requires states subject to this provision to submit to EPA by May 15, 1994 a State Implementation Plan (SIP) revision to establish and implement a fleet program. This means that enabling legislation to establish such a program must be passed soon to enable your agency to develop regulations establishing a fleet program, adopt those regulations, and submit them as a SIP revision to EPA. For this reason, we are encouraging you to seek enabling legislation during the 1993 legislative session.

Another issue that has become of concern to us and many states is the interagency coordination necessary to successfully meet the requirements of the Energy Policy Act of 1992 (EPACT). This Act has an alternative fuel fleet requirement which differs somewhat from the CAA fleet requirement. However, some requirements do "overlap". Because the requirements of both the CAA and the EPACT must be met by Pennsylvania, EPA and DOE feel that strong cooperation and coordination is needed to ensure that the requirements of both programs are met by the statutory deadlines.

The state energy agencies have submitted to DOE a 5-year plan describing how the State will convert to clean alternative fuels. This strategy will eliminate many barriers in establishing and implementing a successful clean fuel fleet program in your state.

The DOE is hosting a conference on February 12, 1993 in Philadelphia that will address the differences/similarities between the CAA fleet program and the EPACT fleet program (see enclosed brochure for details). The speakers will include representatives from the congressional committee that developed the EPACT. We plan to attend this conference and urge your agency to be represented as well.

EPA Region III will be working closely with each state agency as well as DOE in the development of fleet programs. To assist us in providing guidance to your agency, we are soliciting comments, questions and concerns that you may have regarding the requirements of these two programs. Kelly Sheckler is the contact for this program. Please have your staff contact her at (215) 597-0545. Also, please let Kelly know whether or not someone from your agency will be attending the DOE conference in February.

If, after evaluating your responses and the issues raised by the DOE conference, there is a need for additional information or discussion, this office will conduct a workshop or provide written guidance to address any outstanding issues.

Sincerely,

Thomas J. Maslany, Director
Air, Radiation and Toxics Division

Enclosure

cc: Wick Havens

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Honorable Robert P. Casey
Governor of Pennsylvania
225 Main Capitol Building
Harrisburg, Pennsylvania 17120

JAN 15 1993

Dear Governor Casey:

The Clean Air Act, as amended in 1990 (CAA), establishes a number of new requirements that must be met by areas that are designated nonattainment for the criteria air pollutants ozone, carbon monoxide (CO) and/or particulate matter (PM-10) and areas that are part of the ozone transport region. In addition, every State was required to submit a small business assistance plan.

We commend the Department of Environmental Resources for the State Implementation Plan (SIP) elements that have been adopted and submitted to EPA. We consider these SIP submittals to be a high priority and will process them as quickly as possible.

While we recognize that Pennsylvania has made substantial progress in meeting its obligations under the CAA, not all of the SIP elements due by the major milestone date of November 15, 1992 have been submitted. For those SIP elements which are the subject of today's findings, this office intends to continue to work closely with the Department of Environmental Resources to undertake all necessary efforts to ensure their submittal as soon as possible in order to avoid the implementation of sanctions and the need to promulgate Federal Implementation Plans (FIPs).

By today's letter, EPA is notifying Pennsylvania that pursuant to section 179(a) EPA has made a finding of failure to make a submittal as to the nonattainment areas and programs or program elements identified in the enclosure to this letter. The enclosure lists the program areas for which SIP submittals were due for the particular areas in Pennsylvania by November 15, 1992 and indicates those programs and areas for which EPA is making a finding of failure to submit. In general, such findings are being made for programs or program elements for which the State failed to make any submittal or for which the Commonwealth did not adopt and subject to public hearing as required under sections 110(a)(2) and 110(l).

For most of the findings of failure to submit listed in the enclosure, if Pennsylvania has not made a complete submittal of the identified program(s) within 18 months of this letter, EPA will be mandated to use its authority under section 179(a) to impose at least one sanction identified in section 179(b) in the affected nonattainment area(s). EPA also has discretionary authority under section 110(m) to impose sanctions based on the

State's failure to make a required submittal. In addition, section 110(c) of the CAA provides that EPA promulgate a FIP no later than 2 years after a finding under section 179(a).

Those submittals that have been made are currently under review by EPA for completeness under section 110(k). In the event that any submittal is determined to be incomplete or not approvable, the sanctions and FIP processes will start at the time EPA makes its incompleteness determination or upon final disapproval.

Once EPA has made a finding of failure to submit a required plan or plan element, determined a submittal to be incomplete or disapproved a submitted plan, EPA will not impose mandatory sanctions if within 18 months after the date of the finding or disapproval EPA finds that the State has submitted a complete plan or, in the case of a disapproval, EPA takes final approval action on submitted corrections to the deficiencies for which the plan was disapproved. The EPA will not promulgate a FIP if the State cures the deficiency and EPA takes final action to approve the SIP within 2 years of EPA's finding.

I want to emphasize that the findings made imply no judgement as to State intent; they are merely statements of fact that EPA is required to make under the CAA. EPA takes very seriously its responsibility to administer the CAA in a fair and just manner, and those findings are an exercise of that responsibility.

I look forward to working closely with you and your staff to ensure that the CAA's requirements are met in a timely and effective manner without adverse consequences.

Sincerely yours,

Stanley L. Laskowski
Acting Regional Administrator

Enclosure

cc: Arthur A. Davis, Secretary
Pennsylvania Department of Environmental Resources

Catherine W. Cowan, Deputy Secretary
Air and Waste Management

James M. Salvaggio, Director
Bureau of Air Quality Control

ENCLOSURE

Provided below is a list of the State Implementation Plan (SIP) elements required to be submitted by November 15, 1992 under the Clean Air Act. Information regarding the applicability of the status of Pennsylvania's submittals is provided. Where EPA is making a finding under section 179(a) for the failure of Pennsylvania to make a submittal or for Pennsylvania's failure to submit a complete plan or plan element for the plans or plan elements, these findings trigger the 18-month clock for the mandatory imposition of sanctions under 179(a). If the State makes a complete submittal within that 18-month period, the sanctions clock will be stopped.

OZONE BASE YEAR EMISSION INVENTORY

Where required in the Commonwealth of Pennsylvania: The ozone nonattainment areas of Philadelphia, Pittsburgh, Reading, Allentown, Harrisburg, Sharon, Johnstown, Altoona, Erie, Scranton, York, and Lancaster.

Status of required submittal: Under section 182(a)(1), Pennsylvania was required to submit to EPA by November 15, 1992 a comprehensive, accurate, current inventory of actual emissions from all sources in all ozone nonattainment areas in accordance with guidance provided by EPA. Pennsylvania has submitted the point, area, mobile source, and biogenic ozone base year emission inventories, including documentation, for all the ozone nonattainment areas listed above.

EPA has received all elements required at this time pertaining to ozone base year emission inventories for the areas listed above.

CARBON MONOXIDE BASE YEAR EMISSION INVENTORY

Where required in the Commonwealth of Pennsylvania: The carbon monoxide nonattainment areas of Philadelphia County.

Status of required submittal: Under section 187(a)(1), Pennsylvania was required to submit to EPA by November 15, 1992 a comprehensive, accurate, current inventory of actual emissions from all sources in all carbon monoxide nonattainment areas in accordance with guidance provided by EPA. Pennsylvania has submitted the point, area, and mobile source carbon monoxide base year emission inventories, including documentation, for Philadelphia County.

EPA has received all elements required at this time pertaining to carbon monoxide base year emission inventories for Philadelphia County.

CARBON MONOXIDE ATTAINMENT DEMONSTRATION

No submittal is required for any area in the Commonwealth of Pennsylvania.

CONTINGENCY MEASURES

No submittal is required for any area in the Commonwealth of Pennsylvania.

VEHICLE MILES TRAVELED FORECASTS

No submittal is required for any area in the Commonwealth of Pennsylvania.

EMISSION STATEMENTS

Where required in the Commonwealth of Pennsylvania: The ozone nonattainment areas of Philadelphia, Pittsburgh, Reading, Allentown, Harrisburg, Sharon, Johnstown, Altoona, Erie, Scranton, York, and Lancaster and the remainder of the Commonwealth as part of the Ozone Transport Region.

Status of required submittal: Under sections 182(a)(3)(B), Pennsylvania must submit to EPA by November 15, 1992, a revision to the SIP to require that the owner or operator of each stationary source of oxides of nitrogen (NOx) or volatile organic compounds (VOC) provide the State with a statement showing the actual emissions from that source. Pennsylvania has submitted an emission statement regulation for the nonattainment areas listed above.

EPA has received all elements required at this time for an emission statements regulation for the areas listed above.

VOLATILE ORGANIC COMPOUND REASONABLY AVAILABLE CONTROL TECHNOLOGY CATCH-UPS

Where required in the Commonwealth of Pennsylvania: The ozone nonattainment areas of Philadelphia, Pittsburgh, Reading, Allentown, Harrisburg, Sharon, Johnstown, Altoona, Erie, Scranton, York, and Lancaster and the remainder of the Commonwealth as part of the Ozone Transport Region.

Status of required submittals: Under section 182(b)(2)(B) and (C) and 184(b), Pennsylvania was required to submit to EPA by November 15, 1992 a SIP revision demonstrating compliance with the requirements of the VOC reasonably available control technology (RACT) catch-up provisions. Pennsylvania has submitted regulations for VOC sources where EPA has already

issued Control Technique Guideline (CTG) documents located in the areas listed above. However, with the exception of Allegheny County (part of the Pittsburgh nonattainment area), Pennsylvania has not submitted the required RACT regulations for major VOC sources in other source categories (non-CTG). Pennsylvania has submitted a major source non-CTG regulation for parallel processing. This, however, does not satisfy the statutory requirement for a submittal.

Finding: EPA is today making a finding that Pennsylvania failed to submit the required RACT regulations for major non-CTG VOC sources for the entire Commonwealth of Pennsylvania, with the exception of Allegheny County.

OXIDES OF NITROGEN REASONABLY AVAILABLE CONTROL TECHNOLOGY RULES

Where required in the Commonwealth of Pennsylvania: The ozone nonattainment areas of Philadelphia, Pittsburgh, Reading, Allentown, Harrisburg, Sharon, Johnstown, Altoona, Erie, Scranton, York, and Lancaster and the remainder of the Commonwealth as part of the Ozone Transport Region.

Status of required submittal: Under section 182(f) and 184(b), Pennsylvania was required to submit as a SIP revision to EPA by November 15, 1992 reasonably available control technology (RACT) rules for major stationary sources of oxides of nitrogen (NOx) located in all ozone nonattainment areas classified moderate and above and for all areas in the ozone transport region, respectively. With the exception of Allegheny County (part of the Pittsburgh nonattainment area), Pennsylvania has not submitted NOx RACT regulations for any of the areas listed above. Pennsylvania has submitted a major source NOx RACT regulation for parallel processing. This, however, does not satisfy the statutory requirement for a submittal.

Finding: EPA is today making a finding that Pennsylvania failed to submit the required NOx RACT regulations for the entire Commonwealth of Pennsylvania, with the exception of Allegheny County.

OZONE NEW SOURCE REVIEW

Where required in the Commonwealth of Pennsylvania: The ozone nonattainment areas of Philadelphia, Pittsburgh, Reading, Allentown, Harrisburg, Sharon, Johnstown, Altoona, Erie, Scranton, York, Lancaster and the remainder of the Commonwealth as part of the Ozone Transport Region.

Status of required submittals: For ozone nonattainment areas and ozone transport regions, sections 182(a)(2)(C) and 184(b), respectively, require States to submit to EPA by November 15, 1992 new or augmented new source review (NSR) SIPs that meet the

provisions of Part D of Title I of the Clean Air Act. The Part D NSR permitting provisions applicable in ozone nonattainment areas and in the ozone transport region are generally in sections 172(c)(5), 173, 182 and 184 of the Clean Air Act. EPA has received those NSR-related SIP revisions due November 15, 1992, in accordance with guidance provided by EPA, for Allegheny County (part of the Pittsburgh nonattainment area). Pennsylvania has submitted a new source review regulation for parallel processing. This, however, does not satisfy the statutory requirement for a submittal.

Finding: EPA is today making a finding that Pennsylvania failed to submit those NSR-related SIP revisions due November 15, 1992, in accordance with guidance provided by EPA, for the areas listed above with the exception of Allegheny County.

PARTICULATE MATTER NEW SOURCE REVIEW

Where required in the Commonwealth of Pennsylvania: The PM-10 nonattainment areas of Allegheny County.

Status of required submittal: For moderate PM-10 nonattainment areas designated under section 107(d)(4)(B), section 189(a) requires States to submit to EPA by June 30, 1992 SIPs that meet the augmented new source review (NSR) provisions of sections 173 and 189 of the Clean Air Act. The Part D NSR permitting provisions applicable in PM-10 nonattainment areas are generally in sections 172(c)(5), 173, and 189 of the Clean Air Act.

EPA has received a NSR regulation pertaining to PM-10.

CARBON MONOXIDE NEW SOURCE REVIEW

No submittal is required for any area in the Commonwealth of Pennsylvania.

STAGE II

Where required in the Commonwealth of Pennsylvania: The ozone nonattainment areas of Philadelphia, Pittsburgh, and Reading.

Status of required submittal: Section 182(b)(3)(A) requires each ozone nonattainment area classified moderate and above to submit a revision to the applicable implementation plan, not later than November 15, 1992, to require all owners or operators of gasoline dispensing systems to install and operate a system for gasoline vapor recovery of emissions from the fueling of motor vehicles (Stage II). This requirement applies only to facilities which sell more than 10,000 gallons of gasoline per month or 50,000 gallons per month in the case of an independent small business

marketer. Pennsylvania has submitted a Stage II vapor recovery regulation for the Philadelphia, Pittsburgh and Reading nonattainment areas.

EPA has received Pennsylvania's Stage II regulation.

ENHANCED INSPECTION AND MAINTENANCE

Where required in the Commonwealth of Pennsylvania: The ozone nonattainment areas of the Philadelphia Consolidated Metropolitan Statistical Area (CMSA), Pittsburgh CMSA, Reading CMSA, Allentown Metropolitan Statistical Area (MSA), Harrisburg MSA, Sharon MSA, Johnstown MSA, Altoona MSA, Erie MSA, Scranton MSA, York MSA, Lancaster MSA and in applicable counties of the MSAs in the remainder of the Commonwealth as part of the Ozone Transport Region, with the terms CMSA and MSA as defined in 1990 by the Office of Management and Budget.

Status of required submittals: Under section 184(b)(1)(A), Pennsylvania was required to submit to EPA an enhanced inspection and maintenance (I/M) program or a commitment from the Governor or his designee committing to adopt an enhanced I/M program meeting the requirements of the I/M rule. Pennsylvania has not submitted a formal commitment to adopt an enhanced I/M program for the areas listed above.

Finding: EPA is today making a finding that Pennsylvania failed to submit a formal commitment to adopt an enhanced I/M program for applicable CMSAs and MSAs in the Commonwealth of Pennsylvania.

TRANSPORTATION CONTROL MEASURES TO OFFSET GROWTH IN EMISSIONS

Where required in the Commonwealth of Pennsylvania: Philadelphia ozone nonattainment area

Status of required submittals: Under section 182(d)(1)(A), Pennsylvania was required to submit to EPA by November 15, 1992 transportation control measures (TCMs) to reduce vehicle emissions or a commitment from the Governor or his designee to adopt such measures. Pennsylvania has not submitted a formal commitment to adopt TCMs for the Philadelphia nonattainment area.

Finding: EPA is today making a finding that Pennsylvania failed to submit a formal commitment to adopt transportation control measures which would reduce vehicle emissions in the Philadelphia nonattainment area.

EMPLOYER TRIP REDUCTION PROGRAM

Where required in the Commonwealth of Pennsylvania: Philadelphia ozone nonattainment area

Status of required submittals: Under section 182(d)(1)(B), Pennsylvania was required to submit to EPA by November 15, 1992 a plan establishing an employer trip reduction program for each nonattainment area subject to this provision. Pennsylvania has not submitted a program to establish an employer trip reduction program for the Philadelphia nonattainment area. Pennsylvania has submitted an employer trip reduction program for parallel processing. This, however, does not satisfy the statutory requirement for a submittal.

Finding: EPA is today making a finding that Pennsylvania failed to submit the required employer trip reduction program for the Philadelphia nonattainment area.

OXYGENATED FUELS

Where required in the Commonwealth of Pennsylvania: Pennsylvania portion of the Philadelphia CMSA which contains the carbon monoxide nonattainment area.

Status of required submittals: Under section 211(m), Pennsylvania was required to submit to EPA by November 15, 1992 an oxygenated fuels program. Pennsylvania has submitted a program for oxygenated fuels for the Philadelphia nonattainment area.

EPA has determined that an oxygenated fuel program for the Philadelphia nonattainment area has been submitted by Pennsylvania.

SMALL BUSINESS ASSISTANCE PLAN

Where required in the Commonwealth of Pennsylvania: The nonattainment areas of Philadelphia, Pittsburgh, Reading, Allentown, Harrisburg, Sharon, Johnstown, Altoona, Erie, Scranton, York, and Lancaster and the remainder of the Commonwealth.

Status of required submittals: Under section 507, Pennsylvania must submit to EPA by November 15, 1992 a revision to the SIP to establish a small business stationary source technical and environmental compliance assistance plan. This submission is expected to include the following three elements: the state office to serve as the Ombudsman; the small business assistance plan; and the compliance advisory panel. Pennsylvania has not submitted a plan for assisting small businesses. Pennsylvania has submitted a small business plan for parallel processing.

This, however, does not satisfy the statutory requirement for a submittal.

Finding: EPA is today making a finding that Pennsylvania failed to submit a small business stationary source technical and environmental compliance assistance plan for the Commonwealth of Pennsylvania. This finding does not trigger mandatory sanctions provisions of the CAA. EPA may, however, use its discretionary authority under section 110(m) to impose sanctions for failure to submit this plan.

OPTIONAL SUBSTITUTE FOR CLEAN FUEL FLEET PROGRAM

Where applicable in the Commonwealth of Pennsylvania: Philadelphia ozone nonattainment area

Status: Section 246 requires Pennsylvania to submit a clean fuel fleet program by May 15, 1994. Section 182(c)(4)(B), however, allows Pennsylvania to opt out of the clean fuel fleet program, if Pennsylvania submits a commitment in writing to adopt an alternative program.

Pennsylvania has not submitted a written request to opt-out of the clean fuel fleet program for the Philadelphia nonattainment area. Therefore Pennsylvania will be required to implement the clean fuel fleet program in the Philadelphia nonattainment area. However, since this was not a required submittal, no sanctions and FIP obligations are triggered.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

JAN 12 1993

Mr. Marc Kramer, Executive Director
and Chief Operating Officer
Technology Council of Greater Philadelphia
Suite 803
435 Devon Park Drive
Wayne, Pennsylvania 19087-1945

Dear Mr. Kramer:

This is in response to your December 1, 1992 letter, expressing concern about aspects of the Employer Trip Reduction (Employee Commute Options) program in Southeast Pennsylvania. According to your letter, the Technology Council is particularly concerned about the regional (single zone) approach proposed by the Pennsylvania Department of Environmental Resources (DER) for that program. This office recognizes that care must be taken in determining how the zone approach is applied to affected areas. However, the specification of Employer Trip Reduction program zones is at the discretion of DER, as long as the relevant requirements of section 182(d)(1)(B) of the Clean Air Act Amendments of 1990 are met.

Your letter questions the federal government's specification of the greater Philadelphia "region" in which the proposed program will be applicable. EPA believes that the specification is appropriate because of the nature of ozone air pollution formation and dispersion in the atmosphere. In areas such as this, ozone precursor emissions are emitted in significant quantities in all of the affected counties and the resultant ozone pollution affects all of those counties. In fact, peak ozone concentrations often occur tens of miles downwind of the emission source areas. Given the pervasive nature of ozone pollution, it is necessary to reduce emissions throughout the significant source areas in order to reduce ozone levels to acceptable levels throughout those areas and downwind areas.

The preceding discussion also pertains to your comments about the degree of the ambient ozone problem in Chester County compared to that in the rest of the greater Philadelphia area. Peak ozone concentrations have occurred at diverse locations in the greater Philadelphia area during the past decade, and have

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been interspersed with two and three year periods, such as the present one, of relatively low ozone concentrations. The present Clean Air Act requirements are based upon the 1989-1991 period, during which many ambient ozone standard violations occurred.

This office appreciates your concerns, and would be pleased to communicate further as you deem appropriate. Feel free to contact me at (215) 597-4713 if you wish to discuss any aspects of the proposed Employer Trip Reduction program.

Sincerely,

Marcia L. Spink, Chief
Air Programs Branch